Psychosocial Attributes of Orphaned Youths in Ibadan Metropolis: Implications for Reproductive Health

Olayinka O. Omigbodun
Department of Psychiatry, College of Medicine, University College Hospital, Ibadan, Nigeria

Abstract

Context: The HIV mortality surge in Sub-Saharan Africa has brought a new focus on the plight of orphaned youths.
Objective: To determine the prevalence of orphans and associated psychosocial and reproductive health factors in rural and urban secondary school youths in Southwest Nigeria across two age groups, adolescents aged 17 years and below and youth aged 18-24 years.
Methods: A total of 1850 youth from 20 schools in 3 urban and 2 rural school districts in South-western Nigeria had the self-administered instruments: Global School Health Questionnaire to assess reproductive and other health indices and the Culture Free Self Esteem Inventory.
Results: The overall prevalence of orphans was 10.1 % (15.5% in rural and 8.2% in urban areas}. Most differences between orphans and non-orphans were found in the 9-17 year age group where orphans were more likely to live in rural areas, emerge from polygamous families, have parents with no formal education and have to work. In this group also, orphans were more likely to have 'ever had sexual intercourse' than non-orphans (24% versus 16.7%; $\chi^2 = 4.13$; df:1; p = 0.042) and were also more likely to 'have had sexual intercourse in the past 12 months' (15.8% versus 9.2%; $\chi^2 = 5.4$; df:1; p = 0.020). For the 18-24 year age group, there are no significant differences in sexual behaviour.
Conclusion
Policy makers and implementers need to draw up programmes to address the reproductive health needs of orphans, particularly those aged 17 years and under.
Key Words: Orphans, Youth, Psychosocial, Reproductive Health

Introduction

In Sub-Saharan Africa, the plight of orphaned children has received a lot more attention in recent years as a result of the HIV mortality surge in prime aged adults. [1,2] Current estimates suggest that 4.3% to 5.5% of Nigeria's population are Orphans.[3] Orphans and Vulnerable Children (OVC) is a term used to refer to orphans due to AIDS who comprise approximately 30.2% of the total orphan population. [1] It is however strongly suggested that activities should focus on All orphans and not just those affected by AIDS.

Several studies reveal that orphans run greater psychosocial and reproductive health risks than non-orphans.[4,5,6] Psychosocial problems such as depression, anxiety, low self esteem, living in impoverished and overcrowded environments are factors known to be commoner in OVCs. These are factors also known to be associated with adverse reproductive health outcomes. [4] In a study of 1523 adolescents in Zimbabwe, orphans were more likely to be sexually active, experienced sexually transmitted diseases (STIs), and HIV infected than non-OVCs.[5] There are suggestions that many of these adverse outcomes can be reduced through supportive secondary school education.[5]

Schools have been identified as a place where the mental and physical health of orphans can be provided for.[7] It is also a place where practical support to orphans can be given and where the reproductive health needs of children and youths can be catered for.

This study therefore provides an assessment of orphans in rural and urban secondary schools in Southwest Nigeria. The prevalence of maternal, paternal and double orphans and associated psychosocial and reproductive health factors are determined. This study also attempts to compare the psychosocial and reproductive health needs of the 9-17year and 18-24year groups to determine differences. Present interventions for orphans tend to be limited to the younger age group based on the UN and UNICEF definition of a child. [1] This study may help to identify specific age group needs of orphans.

Method

Sampling

The target population for this study included all students in secondary schools in the 11 rural and urban districts in Ibadan and its environs. All classes (JSS1-SSS3) were included in the study. This orphan study was just one aspect of a study to determine the prevalence of mental health problems in adolescents in secondary schools. Based on an estimated prevalence of mental health problems of 20%, [8,9] power of 90% and a 5% level of significance, a minimum sample size of 1345 students was required and this was increased to 2000 to

Correspondence: *Dr. O.O. Omigbodun, Department of Psychiatry, University College Hospital, Ibadan, Nigeria.*
E-mail: *fouryinkas@yahoo.co.uk*

accommodate for attrition.[10] Using simple random sampling, 5 districts were selected, 3 urban and 2 rural.

A list of the number of schools in the selected districts was obtained and this list indicated the type of school (public or private) and its population. There were 101 schools from the 5 randomly selected districts and, using probability proportional size, 20 schools were selected. Based on rural-urban school population ratio, the sample of 2000 was divided into 70% urban and 30% rural, translated into 1400 students from urban schools and 600 students from rural schools. Information about the total number of students in each school, number in each class and ratio of boys to girls was used to select the students that would be involved in the study in each school.

For 95 pupils, consent was not obtained or they were absent from school on the day questionnaires were completed. Thirty two questionnaires was inadequately completed and removed from the analysis, while 23 pupils did not indicate whether they were orphaned or not (Mean age 15.70 (SD: 2.49). These youths did not differ significantly from the sample studied by age, gender, or place of abode. Out of the study sample of 2000, 1850 (92.5%) respondents' questionnaires were entered into the final analysis, 477/600 (79.5%) of the rural sample and 1373/1400 (98.1%) of the urban sample.

Procedure

The Ethical Committee, Oyo State Ministry of Health, gave approval for the study. A few days before the administration of the instruments, the schools were visited and students were chosen from each class using simple random sampling. A consent form explaining the purpose and procedure of the study was available in both Yoruba and English for both parent/guardian and student to sign (or thumb print) if they agreed to participate.

On the set day for administration of the instruments, the selected students assembled in classrooms and were reassured of confidentiality. All questionnaires had been translated to the local language, Yoruba using the iterative back translation method. Every student was given the option to choose either an English or Yoruba questionnaire. Each question was read aloud in both English and Yoruba by the researchers and the students completed questionnaires privately and on their own. This process took about one hour and the youth had breaks in between for refreshments. The administration of the questionnaire was done in both languages because even though the language of instruction in secondary schools is English, Yoruba is the mother tongue and school pupils in this environment are bilingual. Data was collected between January and March 2004.

Instruments and Measures

Demographic information

Respondents were asked to indicate whether their mother, father or both parents were deceased. In addition, other socio-demographic information such as place of abode, gender, age, family structure (monogamous or polygamous), level of education of parents and whether work was done to earn money before or after school were obtained.

Global School-Based Student Health Survey (GSHS)

Core Questionnaire Modules [11]

The World Health Organization in collaboration with the Center for Disease Control developed this questionnaire for the Global School-based Health Surveillance System. This questionnaire looks at several aspects of adolescent health. Relevant portions of the questionnaire were used to identify reproductive and diet factors showed to be associated with orphan hood in previous research. [6] Questions were asked as follows:

Reproductive Health

Have you ever had sexual intercourse? (yes, no)

During the past 12 months, have you had sexual intercourse? (yes, no)

The last time you had sexual intercourse did you or your partner use condoms? (yes, no)

Food Availability (Diet)

During the past 30 days, how often did you go hungry because there was not enough food at home? (never, rarely, sometimes, most of the time, always)

Culture Free Self Esteem Inventory Form B[12]

Ten items were selected from this 30 item questionnaire to identify problems with self-esteem associated with orphan hood as found in previous studies. [13] The pupils were to tick 'yes' or 'no' to the following statements:

1. 'I like being a boy/I like being a girl'
2. 'I am a failure at school'
3. 'Boys and girls like to play with me'
4. 'My parents or guardians make me feel that I am not good enough'
5. 'I am happy most of the time'
6. 'Most boys and girls are better than me'
7. 'I have lots of fun with my parents/guardians'
8. 'I would change many things about myself if I could'
9. 'My teacher feels that I am not good enough'
10. 'I can do things as well as other boys and girls'

Statistical Analysis

Descriptive statistics such as means and standard deviations were used to summarize quantitative variables, while qualitative variables were summarized with percentages. The chi-squared test was used to compare two proportions and to investigate association between two qualitative variables at the 5% level of significance. Variables that were statistically significant

in the bivariate analysis were then entered into a multiple logistic regression analysis using the stepwise backward elimination method. Associations between orphanhood and the explanatory variables were described using odds ratios and 95% confidence intervals, which were computed using the logistic regression model, were relevant.

Results

There were 1487 youths aged 9-17years and 363 aged 18-24years making a total study population of 1850. Their mean age was 15.24years (2.50years). Males were in the slight majority with 962/1850 (52.0%). The 18-24year group had significantly more males (56.7%) than the 9-17year group (50.8%) (p=0.044). A greater proportion of the 18-24year group live in rural areas (p<0.001), come from polygamous families (p<0.001), and work to earn a living (p<0.001). The 9-17year group reported more fathers and mothers with a tertiary education (p<0.001). Table 1 reveals demographic characteristics of the study population.

Table 1: Demographic Characteristics of the Study Population

Demographic Characteristics	9-17years N=1487 n (%)	18-24years N=363 n (%)	N =1850 n (%)
Gender			
Male	756 (50.8)	206 (56.7)	962 (52.0)
Female	731 (49.2)	157 (43.3)	888 (48.0)
Place of abode			
Urban	1155 (77.7)	218 (60.1)	1373 (74.2)
Rural	332 (22.3)	145 (39.9)	477 (25.8)
Family Structure			
(missing data:101)			
Monogamous	1057 (74.4)	212 (64.6)	1269 (72.6)
Polygamous	364 (25.6)	116 (35.4)	480 (27.4)
Father's Educational Level			
(missing data:5)			
Do not know	73 (4.9)	37 (10.2)	425 (23.0)
No formal Education	183 (12.3)	91 (25.1)	110 (6.0)
Primary Level	346 (23.3)	128 (35.4)	274 (14.9)
Secondary level	515 (34.7)	47 (13.0)	474 (25.7)
Tertiary level	366 (24.7)	59 (16.3)	562 (30.5)
Mother's Educational Level			
(missing data: 20)			
Do not know	127 (8.6)	67 (18.7)	314 (18.3)
No formal Education	226 (15.4)	111 (30.9)	149 (10.6)
Primary Level	403 (27.4)	102 (28.4)	290 (18.4)
Secondary level	421 (28.6)	39 (10.9)	464 (27.6)
Tertiary level	294 (20.0)	40 (11.1)	429 (25.1)

Prevalence of Orphans

A total of 186 (10.1%) youths were orphaned. The total number of orphans in the 18-24 year group (63/363; 17.4%) was significantly more than in the 9-17 year group (123/1487; 8.3%) ($\chi^2 = 33.32$; $p < 0.001$). (See Table 2). The prevalence of orphans in rural areas was 74/477 (15.5%) and in urban areas 112/1390 (8.2%).

Table 2: Prevalence of Paternal, Maternal and Double Orphans

	9-17years	18-24years	Study population
Orphan Status	n (%)	n (%)	n (%)
Both Parents alive	1364 (91.7)	300 (82.6)	1664 (89.9)
Paternal Orphan	97 (6.5)	49 (13.5)	146 (7.9)
Maternal Orphan	21 (1.4)	12 (3.3)	33 (1.8)
Double Orphan	5 (0.3)	2 (0.6)	7 (0.4)
Total	1487 (100.0)	363 (100.0)	1850 (100.0)

Demographic and other Health Factors Associated with Orphan hood

Several demographic and health factors were looked at in relationship to Orphan hood. Table 3 displays demographic factors significantly associated with the 9-17 year and 18-24 year groups on bivariate analysis. In the 18-24year group, the only one demographic factor significantly different was that which indicated that orphans were more likely to come from polygamous families (51.4%) when compared to non-orphans (33.4%) ($\chi^2 = 4.42$; df:1; p = 0.035). In the 9-17 year group there are significant differences between orphans and non-orphans in place of abode, age, family structure, father and mother educational level and working circumstances. (See Table 3).

Table 3: Association between Demographic Factors and Orphan hood in Youths Aged 9-17years & 18-24years

Demographic Factors	9-17years Orphans n %	9-17years Non Orphans n %	p	18-24years Orphans n %	18-24years Non-Orphans n %	p
Place of Abode						
Rural	48/123 (39.0)	284/1364 (20.8)	<0.001	26/63 (41.3)	119/300 (39.7)	NS
Urban	75/123 (61.0)	1080/1364 (79.2)		37/63 (58.7)	181/300 (60.3)	
Age						
9-14years	41/123 (33.3)	698/1364 (51.2)	<0.001	NA	NA	NA
15-17years	82/123 (66.7)	666/1364 (48.8)				
Family Type						
Monogamous	40/78 (51.3)	1017/1343 (75.5)	<0.001	17/35 (48.6)	195/293 (66.6)	0.035
Polygamous	38/78 (48.7)	326/1343 (24.3)		18/35 (51.4)	98/293 (33.4)	
Level of Education (Father)						
Pupil does not know	39/123 (31.7)	327/1360 (24.0)	0.004	7/63 (11.1)	52/299 (17.4)	NS
No formal education	10/123 (8.1)	63/1360 (4.6)		7/63 (11.1)	30/299 (10.0)	
Primary school	14/123 (11.4)	169/1360 (12.4)		15/63 (23.8)	76/299 (25.4)	
Secondary school	35/123 (28.5)	311/1360 (22.9)		24/63 (38.1)	104/299 (34.8)	
Tertiary education	25/123 (20.3)	490/1360 (36.0)		10/63 (15.9)	37/299 (12.4)	
Level of Education (Mother)						
Pupil does not know	17/123 (13.8)	277/1348 (20.5)	<0.001	3/61 (4.9)	37/298 (12.4)	NS
No formal education	27/123 (22.0)	100/1348 (7.4)		18/61 (29.5)	49/298 (16.4)	
Primary school	28/123 (22.8)	198/1348 (14.7)		19/61 (31.1)	92/298 (30.9)	
Secondary school	26/123 (21.1)	377/1348 (28.0)		15/61(24.6)	87/298 (29.2)	
Tertiary education	25/123 (20.3)	396/1348 (29.4)		6/61 (9.8)	33/298 (11.1)	

NS: Statistically not significant

Orphans are more likely to live in the rural areas than non-orphans (39.0% versus 20.8%) (χ^2 = 21.56; p < 0.001). There were significantly less orphans aged 9-14years than aged 15-17years (66.7% vs 48.8%) (χ^2 =14.36; df:1; p<0.001) and orphans were more likely to come from polygamous families when compared with non-orphans (48.7 versus 24.3) ((χ^2=23.12; p<0.001).

Orphans were more likely to have fathers and mothers who had no formal education compared to non-orphans. For father's level of education, orphans had 8.1% with no formal education while non-orphans has just 4.6% (χ^2=15.12; p=0.004) and for mother's level of education orphans had 22% with no formal education while the non-orphans had just 7.4% (χ^2=40.1;p<0.001). Demographic factors retained after logistic regression for the 9-17year age are seen in table 4:

Table 4: Odds Ratios for Demographic Factors associated with Orphan hood (Age Group 9-17years)

Demographic Factor	Odds Ratio	95% CI	p-value
Rural Dwelling *vs urban Area*	2.710	1.650-4.450	<0.001
Older Age (15-17years) *vs younger age (9-14years)*	2.038	1.200-3.460	0.008
Polygamous *vs monogamous family*	2.091	1.283-3.410	0.003
Father has no formal Education *vs Father has Formal Education*	1.278	1.035-1.577	0.022
Mother has some formal Education *vs Mother has no formal Education*	0.570	0.455-0.713	<0.001

Reproductive Health

There were differences in the association between reproductive health factors in orphans and non-orphans; this difference is related to the age range. (See Table 5)

Table 5: Association between Reproductive Health, in Orphans and Non-Orphans (Aged 9-17years & 18-24years)

	9-17years			18-24years		
Demographic Factors	**Orphans**	**Non Orphans**		**Orphans**	**Non-Orphans**	
	n %	**n %**	**p**	**n %**	**n %**	**p**
Sexual behaviour						
Ever had sex						
Yes	29/121 (24.0)	226/1355 (16.8)	p=0.042	33/61 (54.1)	125/298 (41.9)	NS
No	92/121 (76.0)	1129/1355 (83.2)		28/61 (45.9)	173/298 (58.1)	
Had Sex in the past 12 months						
Yes	19/120 (15.8)	123/1332 (9.2)	p=0.020	17/62 (27.4)	86/208 (29.3)	NS
No	101/120 (84.2)	1209/1332 (90.8)		45/62 (72.6)	208/294 (70.7)	
Used condom last time had sex						
No	17/24 (70.8)	113/181 (62.4)	NS	10/28 (35.7)	52/112 (46.4)	NS
Yes	7/24 (29.2)	68/181 (37.6)		18/28 (64.3)	60/112 (53.6)	

Orphans aged 9-17years where more likely to have 'ever had sexual intercourse' when compared to non-orphans (24% versus 16.7%) (χ^2=4.13;p=0.042) and were also more likely to 'have had sexual intercourse in the past 12months' (15.8 versus 9.2) (χ^2=5.4; p=0.020). For the 18 to 24 years age group, there are no significant differences in sexual behaviour.

For both age ranges there was no statistically significant difference in condom use between orphans and non-orphans. However rates of condom use were observed to be lower among orphans. For 9-17year group, it was 29.2% for orphans compared to 37.6% for non-orphans (NS) and for the 18-24year group it was 35.5% versus 46.4% for orphans and non-orphans respectively.

Diet, Work Status and Self-Esteem

Table 6 displays the association between orphan status according to age and diet, work status and self-esteem.

Table 6: Association between Diet, Work Status, Self-Esteem and Orphan hood in Youths Aged 9-17years and 18-24years

Demographic Factors	9-17years Orphans n %	9-17years Non Orphans n %	p	18-24years Orphans n %	18-24years Non-Orphans n %	p
Dietary Status						
Going hungry due to lack of food in last 30 days						
Never/rarely	80/121 (66.1)	950/1351 (70.3)	NS	27/63 (42.9)	185/297 (62.3)	0.004
Sometimes/most of the time/always	41/121 (33.9)	401/1351 (29.7)		36/63 (57.1	112/297 (37.7)	
Work Status						
Does student work?						
Yes	42/122 (34.4)	319/1341 (23.9)	0.009	21/63 (33.3)	103/290 (35.5)	NS
No	80/122 (65.6)	1022/1341 (76.2)		42/63 (66.7)	187/290 (64.5)	
Self Esteem						
'I am a failure at school'						
Yes	23/117 (19.7)	166/1325 (12.5)	0.028	11/62 (17.7)	42/284 (14.8)	NS
No	94/117 (80.3)	1159/1325 (87.5)		51/62 (82.3)	242/284 (85.2)	
'I am happy most of the time'						
Yes	89/119 (74.8)	1108/1336 (82.9)	0.026	39/62 (62.9)	239/298 (80.2)	0.003
No	30/119 (25.2)	228/1336 (17.1)		23/62 (37.1)	59/298 (19.8)	
'My parents/guardians make me feel I am not good enough'						
Yes	41/119 (34.5)	349/1326 (26.3)	NS	22/62 (35.5)	64/292 (21.9)	0.024
No	78/119 (65.5)	977/1326 (73.7		40/62 (64.5)	228/292 (78.1)	
'I have lots of fun with my parents/guardians'						
Yes	92/117 (78.6)	1091/1323 (82.5)	NS	36/59 (61.0)	237/290 (81.7)	<0.001
No	25/117 (17.5)	232/1323 (17.5)		23/59 (39.0)	53/18.3 (18.3)	

NS: Not statistically significant

For age group 9-17 years, there was no significant difference in 'having to go hungry because there was not enough food in the home' between orphans and non-orphans. For the 18-25 year group, orphans were more likely to report that during the last 30 days they 'Had to go hungry because there is no food at home' (57.1% vs 37.7%) (χ^2 =8.11; df:1; p = 0.004). In the 9-17year group, orphans were significantly more likely to work before or after school to earn money when compared to non-orphans (34.4% vs 23.9%) (p=0.009). In the older age group the proportion of orphans and non-orphans working was almost the same (33.3% vs 35.5%) (NS).

Two statements in the self esteem section were significant on bivariate analysis for the 9-17year group. Orphans were more likely to give a 'yes' reply to 'I am a failure at school' than non-orphans (19.7 versus 12.5) (χ^2 =4.79; df:1; p=0.028). This pattern was more pronounced for the maternal orphans (25.0%) than the paternal orphans (19.6%). Orphans were also more likely to give a 'No' response to the statement 'I am happy most of the time' than non-orphans (25.2% versus 17.1%) (χ^2 = 4.97; df:1; p=0.026). A breakdown of the categories of orphans revealed that for reporting a 'No' to the statement "I am happy all the time', was as follows: 21.5% of paternal orphans, 33.3% of maternal orphans and 60% of double orphans. For the 18-25year group, 3 self esteem statements were more likely to occur in orphans compared to non-orphans, a 'yes' to the statement 'my parents or guardians make me feel I am not good enough' (35.5% versus 21.9%) (χ^2 =5.12;p=0.024), a 'no' to 'I am happy most of the time' (37.1 versus 19.8) (χ^2=8.7; p=0.003) and a 'no' to 'I have lots of fun with my parents or guardians' (χ^2 =12.34;p<0.001).

Discussion

Overall, 10.1% of youth in secondary schools in rural and urban Southwest Nigeria, had lost at least one of their parents. There is a significant rise in orphan hood with increasing age as illustrated by the number of orphans between ages 18-24years (17.4%) compared to age group 9-17years (8.3%). The rise in prevalence of orphans with increase in age is also observed within the 9-17year age group, with pupils aged 9-14years having a significantly lower proportion of orphans than those aged 15-17years. Youths were four times more likely to lose their fathers and double orphans were found in less than 1% of the study population.

Significant demographic differences were also found between the age range 9-17years and 18-24years. For the younger age group, orphans were more likely to live in rural areas, have a polygamous family structure and have parents with little or no formal education. For orphans in the 18-24year group the only significantly different demographic factor was polygamous family structure being more likely for orphans.

With regards to reproductive health, there were interesting differences between the age groups. Orphans aged 9-17years were more likely to 'ever have sex' and to have 'had sex in the past one year' than non-orphans. On the other hand, there were no significant differences in the sexual behaviour of orphans and non-orphans in the older 18-24year group. There were also no significant differences between orphans and non-orphans in condom use among sexually active youths.

Differences between the 9-17year and 18-24year groups were also observed for dietary intake and working to earn a living. Orphans in the older age group were significantly more likely to report 'having to go hungry because there was no food at home', an observation not made in the 9-17year group. Orphans in both age groups also revealed evidence of lower self esteem than non-orphaned youth. Statements depicting low self esteem, and unhappiness, 'I am a failure at school', 'my parents/guardians make me feel I am not good enough' and not being happy, were more likely to be reported by the orphaned youths. In this particular section on self-esteem, a trend was noticed with double orphans most likely to have low self esteem, followed by maternal orphans and lastly paternal orphans.

This study is one of the very few carried out in Sub-Saharan Africa, comparing demographic, psychosocial and reproductive health issues in orphans and non-orphans. [4] The sample for this study was drawn from adolescents and youths in secondary schools thus missing out orphans who are out of school and others who had to leave school when they became orphaned. [6] Research also suggests orphans have lower school attendance rates.[15,16]

On the other hand, it is important to study in the school setting because this has been identified as a place where the mental, physical and social wellbeing of children and adolescents can be provided for and where practical support to orphans can be given.[7] Furthermore in Southwest Nigeria where this study was conducted, free education is provided in public schools up to the end of secondary school in both rural and urban areas thereby allowing a substantial number to still access and benefit from school.

Another constraint to this study is that the information on reproductive health obtained was rather limited. It would have been expedient to look at HIV infection, sexually transmitted infection (STIs), pregnancies and their outcome in these pupils. However these issues were beyond the scope of this study and patterns of sexual activity have been found to be a gauge for several reproductive health indices.[16]

No attempt was made to find out the various causes of death in parents thereby removing the ability to compare orphans as a result of HIV with other causes. A recent study observed that adolescents orphaned as a result of other causes reported higher rates of depression and anxiety and lower self esteem than AIDS orphans.[13] It was suggested that possible reasons for this would be that AIDS orphans may have more time to prepare for the death of a parent and may also be receiving support through available programmes specifically for AIDS orphans. This study identifies all orphans thereby giving a global perspective of the plight of orphans in this environment.

The strengths of this work remain the large sample size, from both urban and rural areas and the collection of data on several demographic, psychosocial and reproductive health factors. This study has also looked at orphans at two different age groups, 9-17years which is the based on the UNICEF definition of a child [1] and the older 18-24year group described as youth.[17]

Most estimates on the number of orphans have been based on mathematical models incorporating several assumptions thereby making it difficult to compare studies.[18] An analysis of orphan hood based on National surveys in 40 Sub-Saharan countries, found that 9% of children less than 15years had lost at least one parent.[14] Another study of a rural population in Uganda had 10.4% of children under 15years orphaned. [15] In Zimbabwe, 12.8% of all children surveyed in a peri-urban community were orphaned. [19] Although direct

comparisons are not possible with this study due differences in characteristics of the study population such as age groups, sampling, the prevalence of orphans (10.1%) found in this study is somewhat similar to these studies.

The pattern of the prevalence of orphans found in this study is also very similar with respect to rural-urban distribution, age range and type of orphan hood. In the study on orphans in Zimbabwe, [19] the prevalence of orphans was 17.1% in the rural areas contrasting with a low prevalence of 4.3% found in a more affluent suburb. Rural and urban rates of orphans in this study were 15.5% and 8.2% respectively. In the study by Foster et al, [19] rates also increased with age and highest number of orphans were paternal orphans, than maternal orphans and double orphans having the lowest prevalence as found in this study.

The demographic factors strongly and independently associated with orphan hood in the 9-17year group in this study, were illiteracy, lower social class, polygamous homes and rural dwelling. This point to an association of unfavourable demographic factors such as poverty and ignorance with orphan hood as has been observed in other studies. [4,14] With the exception of polygamous homes which was significantly associated with orphan hood in both age groups, it is not clear why these adverse demographic factors are only associated with the younger age 9-17years group.

Rates of sexual activity were also higher in orphans' in the younger 9-17years group when compared to non-orphans. Various explanations have been given for the higher rates of sexual activity among orphans. There are suggestions that losing a parent is an important aspect of vulnerability exposing the orphan to less support and supervision and hence to sexual exploitation and sexual violence. [20] Sexual activity has major consequences for reproductive health and is directly related to sexually transmitted diseases, pregnancy and childbirth. [16] Sexual activity exposes to HIV, gonorrhoea, syphilis, chancroid, and chlamydia, which in turn have serious consequences for pelvic inflammatory disease and sterility, central nervous system pathology and even death. [16] In this study only 29.2% of sexually active orphans in the 9-17year group reported using condoms the last time they had sexual intercourse.

The younger orphans (9-17years) were also more likely to have to work to earn money and were also observed to have lower self esteem. These two factors are also linked to reproductive health issues. Adolescent hawkers are a well known high risk group for exposure to sexual activity [21] and adolescents with low self esteem and less likely to negotiate for safe sex and more likely to succumb to pressure to have sex. [16,21]

Rates of sexual activity were high in the older 18-24year group but there were no differences between orphans and non-orphans. The older orphans in this study were more likely to report having to go hungry because of a lack food and also had self-esteem problems indicating that support is still needed for this group.

These differences in reproductive and other factors between orphans and non-orphans in the 9-17 and 18-24year group reveal that both groups need different kinds of support. The younger age group as would be expected are more vulnerable and need more support especially with regards to reproductive health.

This study on orphans within the school setting points to a great need. For orphans, receiving an education is key to survival and a ticket out of a poverty cycle and adverse reproductive health consequences [4,5,20] and all most be done to keep orphans in school. Schools should also be strengthened and equipped to face the orphan crisis. Teachers need training on how to identify the psychosocial needs of children, how to provide grief counselling, how to tackle stigma and discrimination. It is also a place where practical support to orphans can be given such as providing one nutritious meal and reproductive health education can also be administrated in this setting.

In drawing out plans for orphans, it is important not to forget the rural areas where most reside. While not underestimating the loss of any parent, further studies may want to look at the differences in the consequences of maternal as opposed to paternal orphans so that needs may be directed appropriately.

Given the obvious link between orphan hood, adverse demographic variables, and reproductive health, especially in the younger age groups, policy makers and programme planners and implementers should continue to draw up programmes focusing on the differing needs.

References

1. UNICEF and UNAIDS (1999) Children orphaned by AIDS: Front-line responses from Eastern and Southern Africa. United Nations Children's Fund (UNICEF) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) [online]. Available at http://www.unaids.org/highband/fact/saepap98.html or http://www.uniaids.org/publication/documents/children/young/orphrepteng.pdf

2. Hunter S, Williamson J (1998) *Children on the Brink: Strategies to support a generation isolated by HIV/AIDS.* Washington DC., US agency for International Development

3. Policy Project Group. Rapid Country Assessment, Analysis, and Action Planning (RAAAP) Initiative on behalf of Orphans and other Vulnerable Children in Sub-Saharan Africa. USAID, UNICEF, UNAIDS, WFP, November 5th 2005. Available at http://www.policyproject.com/pubs/countryreports/AFR_OVC_RAAAP

4. Andrews G, Skinner D, Zuma K. Epidemiology of health and vulnerability among children orphaned and made vulnerable by HIV/AIDS in sub-Saharan Africa. *AIDS Care,* 2006; 18:269-76

5. Gregson S, Nyamukapa CA, Garnett GP, Wambe M, Lewis JJ, Mason PR, *et al.* HIV infection and reproductive health in teenage women orphaned and made vulnerable by AIDS in Zimbabwe. *AIDS Care*, 2005; 17:785-94.

6. Ajala AO, Babatimehin O. The impact of HIV/AIDS on the household. In: Ajakaiye DO and Odumosu OF (eds), *Socio-economic Burden of HIV/AIDS Epidemic in Nigeria.* Nigerian Institute of Social and Economic Research (NISER), Ibadan. 2002

7. OVC toolkit group, OVC in health sector programmes, November 5th 2005. Available on http://www.ovcsupport.net/sw4117.asp,

8. Jegede O, Cederblad M. Problemes de Saute Mentale des Enfants du Nigeria. *Livre Annual de L'Association Internationale de Psychiatrie de L'Enfant et de L'adolescent et des Professions Associees.* 1990; 9: 519-528.

9. Abiodun OA. Emotional illness in a paediatric population in Nigeria. *East Afr Med J,* 1992; 69:557-559.

10. Dawson-Saunders B, Trapp RG (eds) *Basic and clinical Biostatistics. Appleton and Lange,* Norwalk, Connecticut, 1990

11. World Health Organisation (WHO), Centers for Disease Control and Prevention (CDC). *Handbook for Conducting the Global School-Based Student Health Survey.* World Health Organisation, Geneva and Centers for Disease Control, Atlanta 2003

12. Special Child Publication. *Culture Free Self Esteem Inventory Form B.* Seattle, Washington, USA. 1981

13. Wild L. Mental health needs of infected/affected children and youths. *Paper presented at the 15th South African Association for Child and Adolescent Psychiatry and Allied Professions (SAACAPAP),* Durban, South Africa, 4-6 September, 2005

14. Skinner D, Tsheko N, Mtero-Munyati S, Segwabe M, Chibatamoto P, Mfecane S, et al. Towards a Definition of Orphaned and Vulnerable Children. *AIDS Behav.* 2006: 26.

15. Monasch R, Boerma JT. Orphanhood and childcare patterns in sub-Saharan Africa: an analysis of national surveys from 40 countries. *AIDS.* 2004; 18: S55-65.

16. Kamali A, Seeley JA, Nunn AJ, Kengeya-Kayondo JF, Ruberantwari A, Mulder DW. The orphan problem: experience of a sub-Saharan Africa rural population in the AIDS epidemic. *AIDS Care.* 1996; 8: 509-15.

17. Desjarlais R, Eisenberg L, Good B, Kleinman A. *World mental health: Problems and priorities in low-income countries* Oxford: Oxford University Press, 1995

18. WORLD BANK *World development report 1993: Investing in health* New York: Oxford University Press. 1993

19. The White Oak Project. Building International Support for Children Affected by AIDS. A Report from a Workshop held at the White Oak Conservation Center Yulee, Florida. November 5th 2005 Available at http://www.aidsinfonyc.org/orphan/whiteoak.html

20. Foster G, Shakespeare R, Chinemana F, Jackson H, Gregson S, Marange C et al. Orphan prevalence and extended family care in a peri-urban community in Zimbabwe. *.AIDS Care,* 1995;7 : 3-17.

21. Omigbodun O.O. Psychological Aspects of Gender Relationships and their Impact on Reproductive Tract Infections in Nigerian Women. Chapter 4. 32-48. In Omigbodun A.O. (ed) Reproductive Tract Infections in Nigerian Women, Proceedings of an International Workshop. Nigerian Medical Association. 1993